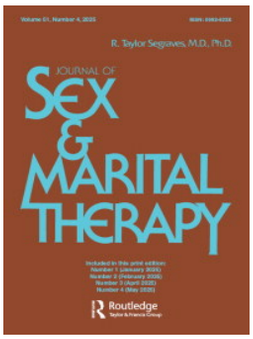

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Can Masturbation Regulate PTSD Symptoms? Exploring the Mediating Role of PTSD in Childhood Sexual Abuse and Masturbation Motives

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ABSTRACT

Childhood sexual abuse (CSA) is a significant public health issue with profound and long-lasting effects on survivors' emotional, psychological, and sexual well-being. While extensive research has examined the interpersonal sexual challenges associated with CSA, less is known about its association with solitary sexual behaviors such as masturbation, particularly the underlying motives or reasons. This study examined the mediating role of post-traumatic stress disorder (PTSD) symptoms in the relationship between CSA and three specific masturbation motives: mood improvement, relaxation/stress relief, and sexual arousal decrease. A sample of 624 adults ($M = 29.51$ years, $SD = 10.23$) completed an online survey assessing CSA history, PTSD symptoms, masturbation frequency, and motives for masturbation. Structural equation modeling (SEM) revealed that PTSD fully mediated the associations between CSA and the three masturbation motives. Specifically, CSA was associated with higher PTSD symptoms, which, in turn, were linked to higher levels of masturbation motives related to mood improvement, relaxation, and sexual arousal decrease. Notably, the direct associations between CSA and masturbation motives were not statistically significant. These findings suggest that masturbation may serve as a coping mechanism—either as adaptive emotional regulation or, at times, as a maladaptive response involving avoidance or distress.

Introduction

Childhood sexual abuse (CSA) is a global public health and social problem with long-lasting negative effects (MacIntosh & Ménard, 2021; Nagtegaal & Boonmann, 2022). According to the World Health Organization (WHO), CSA involves a child in sexual activity they cannot comprehend, consent to, or are developmentally unprepared for, often occurring within relationships of trust, responsibility, or power to gratify another person (World Health Organization, 1999). Estimates suggest that 8–31% of girls and 3–17% of boys worldwide experience CSA, affecting millions annually (Barth et al., 2013). These statistics underscore the far-reaching and enduring consequences of CSA across diverse populations.

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The consequences of CSA extend far beyond the immediate aftermath, encompassing a range of negative short- and long-term effects on survivor's physical and mental health (Hailes et al., 2019; Maniglio, 2009; Noll, 2021). Among these, the sexual repercussions of CSA continue to gain recognition from the therapeutic and research communities. Recent studies showed that CSA is associated with a spectrum of sexual difficulties, including sexual dysfunction and distress (Bigras et al., 2021; Gewirtz-Meydan & Opuda, 2022; Pulverman et al., 2018), sexual shame (Pulverman & Meston, 2020), sexual avoidance (Labadie et al., 2018; Vaillancourt-Morel et al., 2015), and sexual anxiety (Bigras et al., 2015). CSA has also been linked to compulsive sexual behaviors, such as excessive masturbation, as well as a lack of sexual enjoyment and satisfaction—both of which may involve solitary sexual activity (Bigras et al., 2021; Slavin et al., 2020). While extensive research has explored these sexual challenges, surprisingly little is known about how CSA is associated with solitary sexual behaviors specifically, such as masturbation, and the underlying motives that may drive this behavior. Understanding this association is important, as it may shed light on how survivors navigate their sexual experiences and cope with trauma-related symptoms. Masturbation, like other sexual behaviors, may serve multiple psychological functions, including emotional regulation and coping with trauma-related symptoms. Given that PTSD is one of the most common and impactful outcomes of CSA (Ali et al., 2024; Boumpa et al., 2024; Rowan & Foy, 1993), and that it often involves difficulties with arousal regulation, avoidance, and intrusive symptoms, it is a theoretically relevant mechanism to consider. To address this gap, the present study examined the relationship between CSA history and motives for masturbation, with a specific focus on the mediating role of PTSD symptoms.

Motives for masturbation

Masturbation refers to the self-stimulation of one's genitals for the purpose of sexual arousal and, often, orgasm. It is a highly prevalent sexual activity for both men and women, offering various health benefits (Cervilla et al., 2024; Fischer et al., 2022; Gerressu et al., 2008). Solo masturbation is an individual practice and a regular part of many people's sexual activity (Gerressu et al., 2008; Robbins et al., 2011). According to the TENGA 2019 Self-pleasure report (2019), a significant 84% of Americans reported ever masturbating. In terms of frequency, 60% of Americans who masturbate do so at least once a week. Additionally, the study revealed that 82% of Americans masturbate while in relationships, although only 63% of them believe their partner is aware of it. A recent study found that 47.8% of participants masturbated in the past month, with more men (60.1%) than women (36.5%) engaging in this behavior (Herbenick et al., 2023).

Motivations for masturbation vary and often include pleasure and self-exploration, which activate the brain's reward circuitry, providing physical gratification while bypassing the complexities of partnered sex (Goldey et al., 2016; Hevesi et al., 2023; Kılıç Onar et al., 2020; Rowland et al., 2020). Masturbation allows individuals to explore their bodies and preferences in a private, judgment-free space, fostering a sense of autonomy and sexual self-esteem (Foust et al., 2022; Kılıç Onar et al., 2020; Rowland, Hevesi, et al., 2020). Beyond pleasure, it can also serve as a strategy to manage unmet sexual needs or relieve emotional tension in times of stress, singleness, or relational strain (Coleman & Bockting, 2013). For some, this solitary practice may offer a sense of control or comfort when partnered sexual experiences are unavailable or emotionally complicated. Additionally, masturbation may be used to cope with anxiety or low mood, offering temporary relief through the release of endorphins during orgasm, which reduces stress and promotes relaxation (Bowman, 2014; Carvalheira & Leal, 2013; Fahs & Frank, 2014; Hevesi et al., 2023; Kılıç Onar et al., 2020; Rowland et al., 2020). It can also mitigate hyperarousal or intrusive sexual thoughts, helping individuals regain control over their emotional and physiological states (Carvalheira & Leal, 2013; Rowland et al., 2020). In relational contexts, masturbation may serve as an alternative to navigating interpersonal difficulties, such as mismatched libido or unresolved conflicts (Kılıç Onar et al., 2020; Rowland et al., 2020).

According to Hebernick et al. (2023), 63.6% of women and 65.6% of men reported masturbating because they found it pleasurable, making pleasure one of the primary motivations. Similarly, the TENGA 2019 Self-pleasure report (2019) also highlighted that pleasure and self-exploration were key drivers for masturbation, with 31% of Americans reporting they masturbate to satisfy sexual urges and 25% to achieve pleasure. Both studies point to pleasure and self-exploration, yet in addition to pleasure, both studies found that masturbation is used as a way to manage negative emotional states. Hebernick et al. (2023) found that 36.2% of women and 36.7% of men used masturbation for stress relief, while 25.7% of women and 21.4% of men reported using it to help them fall asleep. Similarly, the *TENGA (2019) Self-Pleasure Report* noted that many Americans use masturbation as a form of relaxation, with 74% considering it a form of self-care. These findings suggest that masturbation plays a critical role in managing unmet sexual needs, reducing stress, and providing emotional relief, particularly in situations where partner-based interactions are unavailable or unsatisfactory (Bowman, 2014; Carvalheira & Leal, 2013).

While the motives for engaging in masturbation among CSA survivors remain largely underexplored, existing research shows that CSA is linked to specific coping-related motives in partnered sex, such as reducing distress, managing negative affect, or seeking affirmation (Gewirtz-Meydan & Lahav, 2021; Layh et al., 2020; Orcutt et al., 2005; Schwartz, 2010; Tirone, 2014; Wekerle et al., 2017). These motivations are theoretically grounded in trauma frameworks that emphasize emotional dysregulation, avoidance coping, and impaired affective processing as core features of PTSD (American Psychiatric Association, 2013; McLean & Foa, 2017; Orcutt et al., 2020). Thus, masturbation may similarly function as a form of emotional regulation and trauma coping, especially when survivors experience PTSD-related symptoms such as intrusive memories, negative affect, and physiological hyperarousal.

It is well established that individuals engage in sexual activity—including solitary behaviors such as masturbation—for a wide range of reasons (Young, 2006). Meston and Buss (2007), for example, identified 237 distinct motives for sexual activity, reflecting the complexity and diversity of human sexual behavior. In the present study, we chose to focus specifically on three masturbation motives: mood improvement, relaxation/stress relief, and sexual arousal decrease. These motives were selected due to their conceptual alignment with core symptom clusters of PTSD, namely negative alterations in mood and cognition, emotional dysregulation, and hyperarousal (American Psychiatric Association, 2013). Mood improvement refers to the use of masturbation to elevate mood or counteract depressive or anxious feelings. Relaxation/stress relief encompasses the use of masturbation to reduce overall stress and tension, both physical and emotional. Sexual arousal decrease specifically reflects the use of masturbation to reduce sexual arousal that may feel overwhelming or intrusive—particularly in cases where survivors experience heightened sexual urges or physiological arousal without corresponding desire or emotional readiness. These motives were selected as they best reflect potential self-regulation strategies employed by trauma survivors. Moreover, they are supported by prior literature linking trauma to both compulsive sexual behavior and emotional avoidance (Carvalheira & Leal, 2013; Rowland et al., 2020; Vaillancourt-Morel et al., 2015), and are especially pertinent to understanding how CSA survivors may attempt to manage trauma-related symptoms through solitary sexual activity.

The mediating role of PTSD between CSA and motives for masturbation

Among the primary mechanisms linking CSA to sexual difficulties is PTSD (Bornefeld-Ettmann et al., 2018; Gewirtz-Meydan & Lahav, 2020). PTSD, a common consequence of CSA, encompasses symptoms such as intrusive memories, emotional avoidance, negative mood and cognition, and hyperarousal (American Psychiatric Association, 2013). These symptoms have been proven to significantly shape survivors' sexual experiences and function (Yehuda et al., 2015). For example, intrusive memories may surface during sexual activity, leading to distress or flashbacks;

emotional numbing may diminish the capacity for sexual enjoyment; and avoidance behaviors may result in reduced sexual interest or intimacy difficulties (Bornefeld-Ettmann et al., 2018; Kratzer et al., 2022; Weiss et al., 2023). Furthermore, hyperarousal can cause physical tension, irritability, or heightened startle responses, which may interfere with sexual arousal and orgasm (Rellini & Meston, 2007; Yehuda et al., 2015). Together, these PTSD-related disruptions can contribute to both functional impairments (e.g., low desire, arousal difficulties, or pain) and psychological distress (e.g., shame, guilt, or fear) in sexual contexts. Although the relationship between PTSD symptoms and masturbation motives has not been thoroughly examined, it is plausible that PTSD shapes survivors' motives for engaging in masturbation.

Research showed that survivors of CSA frequently experience PTSD symptoms that shape their sexual function and behaviors (e.g., Vaillancourt-Morel et al., 2015; Pulverman et al., 2018; Slavin et al., 2020). Masturbation may function as a coping mechanism that is both adaptive and maladaptive in the context of trauma. On one hand, it can help regulate emotions, reduce hyperarousal, and alleviate distressing affective states associated with PTSD symptoms. For some survivors, engaging in masturbation may offer temporary relief from intrusive trauma-related symptoms or provide a sense of control over their sexual experiences—reflecting broader patterns of trauma-related coping through sexual behaviors (Maltz, 2002; Gewirtz-Meydan & Ofir-Lavee, 2021). On the other hand, it may also reflect avoidance-oriented coping, particularly when used to escape trauma-related emotions or to avoid vulnerability in interpersonal sexual experiences.

Hyperarousal is a hallmark of PTSD, and can include symptoms such as hypervigilance, heightened startle responses, and elevated sympathetic nervous system activity (Yehuda et al., 2015; Lorenz et al., 2012). Survivors may turn to masturbation as a strategy to regulate these heightened physiological states, and decrease their overall arousal. By engaging in sexual self-stimulation, individuals can release accumulated tension and experience a temporary reduction in stress or discomfort. This physiological relief may serve as a coping mechanism to counteract the overwhelming emotional and physical sensations associated with PTSD (Rellini & Meston, 2006). However, when habitual or compulsive, this strategy may also hinder longer-term emotional processing.

For some survivors, masturbation may serve as means to avoid triggering memories or emotional vulnerabilities that arise during partnered sexual interactions. Physical intimacy or emotional closeness with a partner can evoke reminders of past abuse, leading survivors to perceive such interactions as unsafe or even dangerous (Gewirtz-Meydan & Lassri, 2023; Maltz, 2002). Given that CSA is a relational trauma, survivors often struggle with trust issues, which can make it difficult to fully enjoy, release, and give in to partnered sexual experiences (Nielsen et al., 2018). Additionally, difficulties with assertiveness can leave survivors feeling unable to set boundaries, increasing the risk of sexual experiences becoming retraumatizing rather than fulfilling (Livingston et al., 2007). In such cases, masturbation may be used as a coping strategy to regain a sense of autonomy and control over their sexual experiences. When masturbation is used as an avoidance strategy, it may provide a temporary sense of safety by allowing survivors to engage with their sexuality in a self-contained environment, free from interpersonal triggers or the risk of emotional rejection and re-traumatization (Gewirtz-Meydan, 2022a). This reliance on masturbation as a self-regulation tool may result in a higher frequency of masturbation or motives tied to safety, control, and emotional regulation.

Negative alterations in cognition and mood, are also a core symptom of PTSD, which can be associated with motives for masturbation. Precisely, CSA survivors often internalize negative beliefs about themselves, their sexuality, and others, and may perceive themselves as inherently flawed, experiencing profound feelings of shame, guilt, and disgust (Finkelhor, 1987; Pulverman & Meston, 2020). They may also develop distorted beliefs about others, such as viewing people as primarily interested in them for sexual purposes, further reinforcing a sense of objectification and mistrust (Gewirtz-Meydan & Ofir-Lavee, 2021; Meston et al., 2006). These cognitive and emotional responses may lead survivors to prefer solitary sexual activities like masturbation, which allow them to meet sexual needs without exposing themselves to the perceived risks of

interpersonal sexual engagement. For survivors who feel unworthy of love or affection, masturbation may function as both a coping mechanism for overwhelming negative emotions and a means of self-soothing (Gewirtz-Meydan & Lassri, 2023).

Finally, masturbation may also function as a source of comfort and emotional relief, providing momentary relief from the emotional burdens of trauma. By engaging in a solitary and self-contained act, survivors can distract themselves from trauma-related distress while creating an experience of self-control. Unlike interpersonal sexual interactions, which can be fraught with uncertainty, masturbation allows survivors to maintain autonomy over their bodies and sexual experiences. This sense of control can be especially important for individuals who feel disempowered by their trauma history, providing a momentary reprieve from emotional fragmentation and a means of self-regulation and coping with distress (Rellini & Meston, 2007; Schwartz, 2010). For some survivors, this reliance on masturbation as a tool for emotional regulation may lead to specific motives related to comfort, distraction, and control, potentially influencing the frequency and nature of this behavior.

The current study

Despite the well-established negative association between CSA and partnered sexuality, little is known about how CSA is associated with solitary sexual behaviors such as masturbation, and particularly motives for masturbation. Existing research highlights that CSA survivors often engage in sexual behaviors for coping-related motives, such as managing distress, alleviating negative emotions, or seeking self-affirmation (Gewirtz-Meydan & Lahav, 2021; Layh et al., 2020; Orcutt et al., 2005; Schwartz, 2010). Self-affirmation, in this context, refers to survivors seeking validation and restoring their sense of worth through intimate or sexual experiences to counteract feelings of shame or low self-esteem (Gewirtz-Meydan & Lahav, 2021). These findings suggest that masturbation may serve similar functions, providing a means of emotional regulation and trauma coping. However, to date, there has been no systematic examination of the specific motives for masturbation among CSA survivors, leaving a critical gap in the understanding of how CSA is associated with solitary sexual behaviors.

This study aims to address this gap by investigating the mediating role of PTSD symptoms in the relationship between CSA and masturbation motives—specifically, three key masturbation motives theoretically linked to PTSD symptoms: Mood improvement, relaxation/stress relief, and sexual arousal decrease. We hypothesize that PTSD symptoms will act as an exploratory mechanism in the relationship between CSA and the specific masturbation motives of mood improvement, relaxation/stress relief, and sexual arousal decrease, highlighting the role of trauma-related emotional and physiological dysregulation in shaping these specific behaviors.

Method

Participants and procedure

A convenience sample was recruited to complete an online survey. Eligibility criteria included being at least 18 years old and proficient in Hebrew. Recruitment occurred via social media platforms such as Facebook and Instagram, employing a snowball sampling method. Advertisements recruited participants for a study investigating childhood adversities and their influence on current romantic and intimate relationships. The study protocol received approval from the institutional review board of the Univeristy of Haifa. The survey was conducted on Qualtrics, a secure web-based survey platform, and took approximately 20 minutes to complete. It remained open from 07/2023 to 07/2024. Upon accessing the survey link, participants were directed to an information page that explained the study's objectives and the nature of the questions, and included a consent form. The consent form emphasized the voluntary nature of participation, the option to skip questions or withdraw at any time, and the assurance of response anonymity.

Table 1. Sample characteristics.

Characteristic	Mean ± SD / % (n)
Age (Range: 18–69)	29.51 ± 10.23
Gender (% of women)	84.29 (n = 526)
Masturbation frequency	4.30 ± 2.89 (Range: 1–11)
Sexual orientation	Heterosexual – 74.67% (n = 466)
	Sexual minority individuals – 25.32% (n = 158)
Trans identity	0.64% (n = 4)
Education	Elementary – 0.96 (n = 6)
	High school – 35.63% (n = 222)
	Academic – 63.40% (n = 395)
Working status	Full time – 27.28% (n = 170)
	Part time – 33.06% (n = 206)
	Other – 39.64% (n = 247)
Relationship status	Single – 47.43% (n = 296)
	In a relationship – 20.99% (n = 131)
	Married – 25.32% (n = 158)
	Other – 6.25% (n = 39)
Religious affiliation	Judaism – 67.95% (n = 422)
	Christianity – 5.95% (n = 37)
	Islam – 18.35% (n = 114)
	Other – 7.72% (n = 48)
Religiosity	Secular – 52.48% (n = 327)
	Traditional – 26.64% (n = 166)
	Religious (including ultra-orthodox) – 17.81% (n = 111)
	Other – 3.04% (n = 19)
Income status (compared to the mean income in Israel)	Substantially below – 51.94% (n = 321)
	Below – 21.35% (n = 132)
	Mean – 9.70% (m = 60)
	Above the mean – 16.99% (n = 105)

No incentives were offered for participation. At the survey's conclusion, participants were given access to support hotlines and digital mental health resources, along with the contact details of the researchers for any further inquiries.

The sample consisted of 624 individuals aged 18 to 69 years ($M = 29.51$, $SD = 10.23$). The majority identified as women (84.29%, $n = 526$), with 74.67% ($n = 466$) identifying as heterosexual and 25.32% ($n = 158$) as sexual minorities. Education levels varied, with 63.40% ($n = 395$) holding academic degrees, 35.63% ($n = 222$) having completed high school, and 0.96% ($n = 6$) having completed only elementary education. Employment status was distributed across full-time (27.28%, $n = 170$), part-time (33.06%, $n = 206$), and other arrangements (39.64%, $n = 247$). Additional demographic details, such as family status, religious affiliation, and income are reported in Table 1.

Measures

Childhood sexual abuse was measured using the five-item sexual abuse subscale of the Childhood Trauma Questionnaire (CTQ-SA; Bernstein et al., 2003). The CTQ is a 28-item scale developed to assess childhood physical, sexual, and emotional abuse, as well as physical and emotional neglect. Participants rated the frequency with which these experiences took place over the entire growing up period on a five-point Likert scale ranging from 1 (*never true*) to 5 (*very often true*). In the current study we used the total continuous score of the CTQ-SA. Cronbach's alpha for the CTQ-SA subscale in the current study was excellent (α = .93).

PTSD symptoms were measured using the Posttraumatic Stress Disorder Checklist for DSM-5 (PCL-5; Blevins et al., 2015). The PCL-5 presents four reactions that some people have in response to a very stressful experience (e.g., feeling distant or cut off from other people) and asks respondents to indicate how much they have been bothered by each in the past month. Response options ranged from 0 (*not at all*) to 4 (*extremely*). Items were combined to create a total scale score with higher scores representing more PTSD symptomatology. Cronbach's alpha for the PCL-5 total score in the current study was good (α = 0.86).

Motives for masturbation were assessed using three sub-scales of measuring the reasons for wanting to masturbate of the Attitudes Toward Masturbation Scale (ATMS; Young, 2006): *Mood Improvement* (e.g., "If I'm in a bad mood"), *Relaxation/Stress Relief* (e.g., "To relieve stress"), and *Sexual Arousal Decrease* (e.g., "If I want to decrease my sexual arousal so I can focus on something else"). These motives were chosen because they align with theoretical links to PTSD symptoms, including emotional dysregulation, hyperarousal, and avoidance, which are common among CSA survivors. Participants rated the significance of each reason on a 7-point scale ranging from 0 (*not an important reason*) to 6 (*very important reason*). Scores for each subscale are calculated by averaging the participant's ratings across the corresponding items, with higher scores indicating greater emphasis on the motive. Internal reliability was strong for each selected subscale: Mood Improvement ($\alpha = 0.91$), Relaxation/Stress Relief ($\alpha = 0.90$), and Sexual Arousal Decrease ($\alpha = 0.85$).

Control variables included (1) age, assessed as an open-ended numerical response; (2) gender, examined using the options masculine/man, feminine/woman, non-binary/gender fluid/gender-queer, and an open-ended "other" category for personal descriptions; and (3) frequency of masturbation, which was evaluated by asking participants to report how often they had masturbated over the past year. The response options ranged from 1 (Never), 2 (Once in the past year), 3 (1–6 times in the past year), 4 (7–11 times in the past year), 5 (Monthly), 6 (2–3 times a month), 7 (Weekly), 8 (2–3 times a week), 9 (4–5 times a week), 10 (6–7 times a week), to 11 (More than 7 times a week).

Statistical analysis

Preliminary analyses included Pearson correlations to explore associations among variables. Structural equation modeling (SEM) was used to examine the main hypotheses, using both measurement and structural models. All analyses were conducted using the SEMLj module in Jamovi (version 2.6.21), a graphical interface built on the lavaan package in R, which facilitates the implementation of SEM procedures. SEM analyses were estimated with the maximum likelihood estimator. Missing data were evaluated with Little's MCAR test, which indicated data were missing completely at random, $\chi^2_{(23)} = 32.18$, $p = .096$. Missing values were addressed using full-information maximum likelihood (FIML). The significance of path coefficients was determined through 95% bootstrapped confidence intervals, calculated with the adjusted bias-corrected (BCa) method using 5,000 samples. Coefficients were considered statistically significant if zero was not included in the confidence interval.

Model fits were considered satisfactory when they met recommended guidelines: a statistically non-significant chi-square value or a ratio of chi-square to degrees of freedom (X^2/df) of less than 3, a comparative fit index (CFI) and a Tucker-Lewis Index (TLI) values of .95 or higher, a root–mean-square error of approximation (RMSEA) below .06, and a standardized root-mean-square residual (SRMR) below .08 (Kline, 2016). As Preacher and Hayes (Preacher & Hayes, 2008) recommended to determine the significance of indirect effects, 95% bootstrap confidence intervals (adjusted bias-corrected method) around the estimate of the indirect effect (a*b) were computed using 5,000 bootstrapping samples. An effect was considered statistically significant if its confidence intervals did not include zero.

Results

Measurement model

A confirmatory factor analysis (CFA) was conducted to evaluate the reliability and discriminant validity of the constructs. One item from the Relaxation/Stress Relief scale (item 64) was removed due to high cross-loading with other factors. Additionally, correlated error terms were specified for certain pairs of items based on similar wording or overlap in content. Allowing these correlations to be freely estimated improved model specification.

Fit indices indicated the measurement model was well specified. Although the chi-square test of model fit was statistically significant, $\chi^2_{(284)} = 509.30$, $p < .001$, the relative chi-square value ($\chi^2/df = 1.79$) suggested that the detected departure was not substantial. Additional fit indices confirmed the model's adequacy: CFI = .966, TLI = .961, RMSEA = .035 (90% CI: .031, .039), SRMR = .041. Collectively, these indices indicate strong model fit.

Reliability measures for the constructs were robust, with both Cronbach's alpha (α) and McDonald's omega (ω) coefficients exceeding .80, and average variance extracted (AVE) values above .50. Discriminant validity was supported by the Heterotrait-Monotrait (HTMT) ratio of correlations, with HTMT values below the recommended threshold of .85 (see Table 2). These results demonstrate that the constructs were both reliable and sufficiently distinct from one another.

Preliminary analyses

Zero-order Pearson correlations were calculated to examine the relationships among the study variables (see Table 3). All variables were significantly correlated with one another. The three masturbation motivations demonstrated strong intercorrelations (r = .510–.689), while CSA showed a moderate-to-strong correlation with PTSD (r = .418). To provide additional context, the average CSA score in this sample was 9.49 (SD = 6.65) on a scale of 5 to 25, indicating a range of experiences, with 60.45% (n = 376) of the sample had a score below the cutoff of 6 (Bernstein et al., 2003), and 39.55% (n = 246) of the sample had a score higher than 6.

The mean PTSD score was 5.38 (SD = 4.15) on a 0–16 scale, reflecting variability in trauma-related symptoms across participants. Regarding sexual behavior, the mean masturbation frequency was 4.30 on an 11-point scale, which corresponds approximately to masturbating between 7 and 11 times in the past year. While frequency varied considerably, the average reflects a pattern of occasional masturbation within the sample. Similarly, scores for masturbation motives (Mood Improvement = 6.82, Relaxation/Stress Relief = 17.14, Sexual Arousal Decrease = 11.10) suggest these motives were meaningfully endorsed by participants, with considerable individual differences observed.

Structural model

A SEM approach was used to test whether PTSD mediates the association between CSA and three masturbation motivations: Mood Improvement, Relaxation/Stress Relief, and Sexual Arousal

Table 2. Constructs' reliability and discriminant validity.

				Heterotrait-monotrait (HTMT) ratio of correlations				
	α	ω	AVE	CSA	PTSD	Mood improvement	Relaxation/ Stress relief	Sexual arousal decrease
CSA	.931	.914	.765	1				
PTSD	.860	.829	.595	.468	1			
Mood Improvement	.908	.929	.729	.177	.185	1		
Relaxation/Stress Relief	.903	.912	.592	.281	.211	.784	1	
Sexual Arousal Decrease	.855	.868	.527	.160	.159	.661	.667	1

Table 3. Zero-order Pearson correlations of the study's variables.

	Mean ± SD	CSA	PTSD	Mood improvement	Relaxation/ Stress relief
CSA (Range: 5–25)	9.49 ± 6.65	1			
PTSD (Range: 0–16)	5.38 ± 4.15	.418 ***	1		
Mood Improvement (Range: 4–28)	6.82 ± 5.12	.125 **	.183 ***	1	
Relaxation/Stress Relief (Range: 7–49)	17.14 ± 10.61	.110 *	.149 ***	.689 ***	1
Sexual Arousal Decrease (Range: 6–42)	11.10 ± 7.11	.113 *	.160 ***	.510 ***	.518 ***

Note. All correlations remained significant after FDR correction ($q < .05$). * $p < .05$, ** $p < .01$, *** $p < .001$.

Table 4. Path coefficients of the structural SEM model.

Path	B	SE (B)	β	Bootstrapped 95% C.I. (β)
CSA → PTSD (path a)	.292	.024	.467	.395, .540
PTSD → Mood Improvement (path b)	.196	.057	.159	.072, .247
PTSD → Relaxation/Stress Relief (path b)	.314	.097	.123	.049, .196
PTSD → Sexual Arousal Decrease (path b)	.210	.081	.123	.031, .215
Direct effects (path c')				
Path	B	SE (B)	β	Bootstrapped 95% C.I. (β)
CSA → Mood Improvement	.047	.047	.061	−.058, .180
CSA → Relaxation/Stress Relief	.078	.081	.049	−.050, .148
CSA → Sexual Arousal Decrease	.069	.058	.064	−.042, .171
Indirect effect				
Effect	B	SE (B)	β	Bootstrapped 95% C.I. (β)
CSA → PTSD → Mood Improvement	.057	.017	.074	.032, .117
CSA → PTSD → Relaxation/Stress Relief	.092	.029	.057	.022, .093
CSA → PTSD → Sexual Arousal Decrease	.061	.024	.057	.013, .102
Covariates (Masturbation frequency)				
Path	B	SE (B)	β	Bootstrapped 95% C.I. (β)
Masturbation frequency ←→ CSA	4.90	.779	.254	.178, .331
Masturbation frequency → Mood Improvement	.458	.087	.259	.164, .353
Masturbation frequency → Relaxation/Stress Relief	1.94	.160	.530	.450, .609
Masturbation frequency → Sexual Arousal Decrease	.685	.119	.279	.180, .378

Note. The model also controlled for age, gender and romantic relationship status to account for their potential confounding effects.

Decrease. Age, gender (dummy coded: 0 = man, 1 = woman), romantic relationship status (dummy coded: 0 = no, 1 = yes) and masturbation frequency were included as covariates, though only masturbation frequency is reported in Table 4 as it was the strongest and most substantial covariate among the three. Gender was controlled for because nearly 85% of the sample were women. Participants who identified as non-binary, gender fluid, or genderqueer (less than 1% of the sample) were excluded from the analysis due to insufficient representation. Age was controlled for because it was correlated with CSA ($r = .411$, $p < .001$). Masturbation frequency was controlled for because it was correlated with the motivations ($r = .318–.563$, $ps < .001$). Romantic relationship status was controlled for because there was a significant difference between participant who were or were not in a romantic relationship in Mood Improvement, $t_{(497.28)} = 2.29$, $p = .022$; Relaxation/Stress Relief, $t_{(498.99)} = 4.77$, $p < .001$; and marginally significant difference in Sexual Arousal Decrease, $t_{(481.66)} = 1.77$, $p = .076$.

The initial model was saturated; to obtain fit indices, the path between PTSD and masturbation frequency was removed. This path was the weakest among those involving covariates, and was not statistically significant (β = 0.032, CI = −0.057, 0.122), and had a negligible beta coefficient, suggesting that its removal would not affect model fit.

Model fit indices indicated a well-specified structural model: $\chi^2_{(1)} = 1.19$, $p = .275$, CFI = .999, TLI = .994, RMSEA = .017 (90% CI: .000, .109), SRMR = .006.

The structural model accounted for 19.92% of the variation in PTSD, 15.40% in Mood Improvement, 34.18% in Relaxation/Stress Relief, and 21.08% in Sexual Arousal Decrease. The model is presented graphically in Figure 1 and statistically in Table 4. CSA was significantly and positively associated with more PTSD symptoms, which, in turn, was significantly and positively associated with all three masturbation motivations: Mood Improvement, Relaxation/Stress Relief, and Sexual Arousal Decrease. Direct pathways from CSA to the three masturbation motivations were not statistically significant when PTSD symptoms were included in the model. However, PTSD demonstrated significant and positive indirect effects, mediating the association between CSA and the three masturbation motivations. Specifically, more severe CSA was associated with higher levels of PTSD, which, in turn, predicted greater motivation to masturbate for mood improvement, relaxation/stress relief, and sexual arousal decrease. The absence of

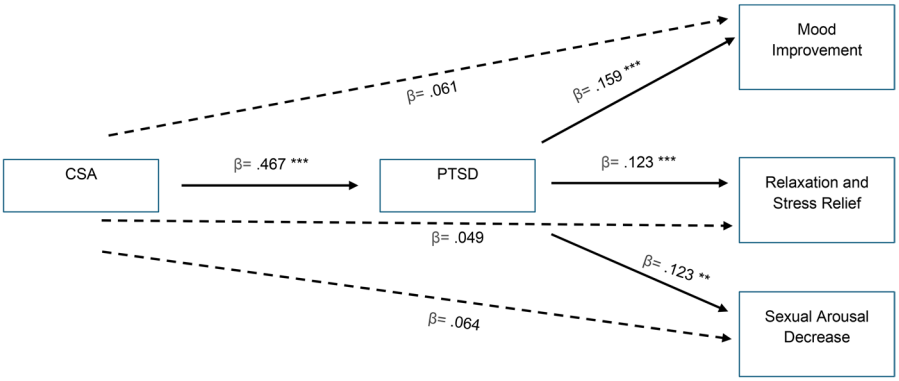

Figure 1. The mediating role of PTSD in the associations between CSA and motives for masturbation.
Note. The figure depicts PTSD as a mediator between CSA and motives for masturbation. Arrows indicate direct and indirect effects, with path coefficients (β, p-values) reflecting the strength and significance of these relationships. Dashed arrows represent direct effects of CSA on motives. ** $p < .01$, *** $p < .001$.

significant direct effects after PTSD symptoms were included in the model suggest that PTSD fully mediated the relationships between CSA and the three masturbation motivations. All indirect effects were significant and are reported in Table 4.

Discussion

This study examined the mediating role of PTSD symptoms in the associations between CSA and three specific motives for masturbation: mood improvement, relaxation/stress relief, and sexual arousal decrease. Consistent with our hypotheses, the findings revealed that PTSD fully mediated these relationships. These results provide critical insights into the mechanisms linking CSA to solitary sexual behaviors and expand the understanding of how trauma may shape motives for masturbation.

The strong indirect associations observed suggest that PTSD symptoms bridge the relationship between CSA and masturbation motives. Specifically, survivors with heightened PTSD symptoms were more likely to engage in masturbation for mood improvement, relaxation, and sexual arousal decrease, underscoring the role of masturbation as a mechanism for emotional escape or regulation (Carvalheira & Leal, 2013; Rowland et al., 2020). This supports prior findings linking PTSD to sexual behaviors aimed at managing distress and reducing intrusive trauma symptoms (Gewirtz-Meydan & Lahav, 2021).

The results also support the theoretical framework suggesting that trauma, particularly CSA, profoundly shapes sexuality, with sexual behaviors like masturbation reflecting trauma-informed coping mechanisms. Masturbation can serve as an accessible and effective outlet for managing trauma-related symptoms such as emotional dysregulation, hyperarousal, and avoidance. While often a valuable and empowering strategy, it can also present challenges depending on the context, underscoring the need to approach these behaviors with sensitivity and care. This perspective highlights the nuanced ways trauma influences sexual behavior, emphasizing the importance of understanding masturbation as part of a trauma-informed framework.

The association between PTSD symptoms and masturbation motives highlights the use of solitary sexual behaviors as a form of emotional regulation. Hyperarousal, a hallmark of PTSD, often results in heightened physiological tension, which masturbation may temporarily alleviate (Yehuda et al., 2015). The neurochemical release associated with orgasm, including endorphins and oxytocin, can provide short-term relief from distress, further reinforcing this behavior as a coping mechanism (Komisaruk et al., 2006). These findings extend the literature on sexual coping behaviors, which has predominantly focused on interpersonal sexual activities, by illustrating the critical role of masturbation in trauma survivors' self-regulation strategies (Layh et al., 2020; Orcutt et al., 2005).

For many CSA survivors, PTSD symptoms also manifest as avoidance of relational intimacy. This avoidance stems from trauma-related fears of vulnerability, emotional closeness, or physical intimacy, which can trigger memories of abuse (Gewirtz-Meydan & Lassri, 2023; Maltz, 2002). Masturbation may provide a controlled, private alternative to interpersonal sexual experiences, allowing survivors to fulfill their sexual needs without exposing themselves to potential triggers.

However, while this study suggests that masturbation may offer temporary relief in the context of PTSD, a more nuanced understanding must also account for instances where masturbation may serve as a maladaptive or compulsive response to trauma. For some survivors, masturbation can reinforce maladaptive patterns, such as avoidance of healthy relational intimacy, perpetuating a cycle of isolation and distress potentially limiting opportunities for survivors to build trust and experience intimacy in partnered relationships (Rellini & Meston, 2007). For others, masturbation may be experienced as compulsive and deeply intertwined with feelings of shame, disgust, and self-hatred—particularly when accompanied by distressing or non-consensual fantasy content, such as rape scenarios (Bivona & Critelli, 2009; Gewirtz-Meydan & Opuda, 2023; Kratzer et al., 2022; Vaillancourt-Morel et al., 2015). These fantasies may not reflect sexual agency or empowerment but instead may signal unresolved trauma and internalized stigma. In some cases, masturbation to such fantasies may reflect self-triggering behaviors—conscious or unconscious re-engagements with trauma-related material—that are potentially linked to disrupted or failed meaning-making processes (Bellet et al., 2020). This underscores the dual nature of solitary sexual behavior: while it may serve as a mechanism for emotional regulation and autonomy for some individuals, it may also perpetuate trauma symptoms and psychological distress for others. Future research should seek to differentiate between adaptive and maladaptive masturbation practices, incorporating assessments of subjective distress, compulsivity, and the content of sexual fantasies to better capture the complexity of these experiences among CSA survivors.

The negative cognitive and emotional effects of PTSD may also contribute to survivors' motives for masturbation. CSA often leads to internalized shame, guilt, and self-disgust, which can deter survivors from engaging in partnered sexual activities (Pulverman & Meston, 2020). Masturbation, by contrast, allows survivors to navigate their sexuality independently, free from external judgment or relational complications. This autonomy may foster a sense of control over their sexual experiences, counteracting the disempowerment often associated with trauma (Schwartz, 2010).

Theoretical contributions and clinical implications

This study offers both theoretical and clinical contributions by highlighting masturbation as a potential trauma-informed coping mechanism among CSA survivors—a topic that has received limited attention in research. Historically, discussions of masturbation have often been framed in simplistic terms, such as excessive or normative use, without adequately exploring its underlying motives or its role as a response to trauma. By examining masturbation motives, this study provides a more nuanced understanding of how trauma shapes sexual behaviors and contributes to survivors' emotional and physiological coping strategies.

Understanding the motives behind masturbation is crucial for clinicians, as it allows us to approach this behavior with the delicacy and nuance it requires. Masturbation itself is often a healthy and empowering sexual activity; however, its function as a coping mechanism varies. For some, it facilitates emotional regulation and reconnection with the body; for others, it may reflect distress, avoidance, or unresolved trauma. For some survivors, masturbation may serve as an avoidance strategy to deal with PTSD symptoms or to circumvent vulnerability in partnered sexual interactions. Challenges such as difficulties in trust, body image, assertiveness, and emotional intimacy can lead survivors to rely on masturbation as a means of avoiding relational risks or discomfort. When used as an avoidance strategy, it may reflect deeper relational and emotional wounds that need addressing in therapy. Conversely, masturbation can also function as an adaptive and empowering behavior for survivors. As a form of self-regulation and

self-exploration, it provides a private, controlled space for survivors to reconnect with their bodies, regain autonomy, and foster a positive relationship with their sexuality. Recognizing when masturbation serves as a means of emotional regulation and empowerment is crucial for clinicians, as it offers a pathway for survivors to develop healthier sexual self-concepts and enhance their well-being.

Moreover, while trauma-focused therapies have shown effectiveness in reducing PTSD symptoms, evidence regarding their impact on sexual symptoms remains contradictory (Gewirtz-Meydan, 2022b; O'Driscoll & Flanagan, 2016; Steil et al., 2024). Given the nuanced ways in which masturbation and sexual avoidance may reflect both symptom relief and deeper relational wounds, a modular, integrative treatment approach—one that combines trauma processing with sexual therapy and embodied work—may offer more comprehensive support for survivors.

The findings emphasize the need for clinicians to approach masturbation with sensitivity, avoiding judgment and focusing instead on understanding the motivations behind the behavior. Therapy should aim to help survivors differentiate between masturbation as an empowering, regulating activity and when it reflects avoidance of relational vulnerabilities or unaddressed trauma. While masturbation can be a valuable strategy for survivors to manage trauma-related symptoms such as emotional dysregulation and hyperarousal, it may also reflect unresolved relational and emotional challenges that require therapeutic attention.

Therapeutic interventions should aim to foster awareness and understanding of the complex relationship between trauma and masturbation. Techniques such as mindfulness-based interventions, sensate focus, and body image work can help survivors reconnect with their bodies in non-avoidant, non-judgmental ways (e.g, Brotto et al., 2012; Gewirtz-Meydan, 2025). For survivors whose masturbation reflects avoidance of partnered intimacy, therapy should address underlying issues such as trust, assertiveness, and relational fears to promote healthier interpersonal connections.

By framing masturbation within a trauma-informed context, this study contributes to a more sophisticated understanding of CSA survivors' sexual behaviors. It highlights the need for clinicians to approach this topic with sensitivity, avoiding judgment while supporting survivors in exploring their sexual well-being and addressing the broader relational and emotional challenges shaped by trauma.

Limitations and future directions

Although the study provides valuable insights, several limitations should be acknowledged. The reliance on self-reported measures introduces potential biases, such as underreporting of CSA experiences or PTSD symptoms due to stigma or recall inaccuracies. Additionally, the cross-sectional design precludes causal inferences, making it unclear whether addressing PTSD symptoms could lead to changes in masturbation motives among CSA survivors. Longitudinal research is needed to better understand how these relationships evolve over time and whether therapeutic interventions targeting PTSD can influence solitary sexual behaviors.

Another limitation is the relatively low levels of PTSD symptoms and CSA scores in the sample, which may limit the generalizability of the findings to populations with higher symptom severity. These lower levels may also attenuate the strength of the associations observed, potentially underestimating the true relationships between the variables. Importantly, this study did not examine distress associated with masturbation or elements of compulsivity, such as feelings of wanting to stop but being unable to do so. Exploring these dimensions in future research would provide a more comprehensive understanding of the complexities surrounding masturbation in this context. Furthermore, the gendered aspects of masturbation motives warrant further investigation, as male and female survivors may exhibit distinct patterns due to differences in socialization processes and trauma responses (Villalba et al., 2020). This is particularly relevant given that the current study included a majority of women, limiting the ability to draw conclusions about potential gender differences. Additionally, cultural factors influencing masturbation

motives and trauma responses represent an important area for future research. Conducting cross-cultural studies would provide valuable insights, as cultural norms and attitudes toward sex and masturbation vary significantly across societies. Understanding these differences could enhance the generalizability of the findings and provide a more comprehensive perspective on how trauma-related solitary sexual behaviors manifest in diverse cultural contexts.

Conclusion

This study sheds light on the complex interplay between CSA, PTSD, and motives for masturbation. By identifying PTSD as a key mediating or exploratory mechanism, the findings highlight the critical role of trauma-related dysregulation in shaping solitary sexual behaviors. These insights underscore the importance of addressing both emotional and physiological dimensions of PTSD in therapeutic interventions, paving the way for more comprehensive approaches to foster sexual well-being and healing in CSA survivors.

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Data availability statement

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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